

EXECUTIVE SUMMARY

Background: Agroterrorist Threat and Consequences

The United States agricultural industry is extremely vulnerable to attack. One source states that 280 documents dealing with agroterrorism were found in Afghanistan caves.¹ In fact, “hundreds of pages of U.S. agricultural documents had been translated into Arabic. Al Qaeda’s interest in American agriculture was more than academic, according to government officials. A significant part of the group’s training manual is reportedly devoted to agricultural terrorism – the destruction of crops, livestock and food processing operations.”²

The science and art of how to promulgate an agroterrorist attack is not an international secret. There is a long history of countries that have worked in this field. This may reflect the common assumption that attacks against agriculture might be more attractive to terrorists because of the economic disruption and the secondary effects on humans.³

Agriculture is a key component of the U.S. economy, comprising over 15% of America’s jobs and 11% of the gross domestic product.^{4,5} Billions of dollars worth of agricultural products are exported monthly resulting in over \$50 billion exported annually.⁶ If the U.S. loses its ability to maintain its agricultural exports through an act of agroterrorism, at least three primary consequences will ensue: cessation of food production, loss of vital export markets, and near-term food shortages.

Many potential adversaries either have or can easily obtain an agroterrorism capability that could cause catastrophic economic effects in the U.S. The economic impact of the September 11, 2001, attacks on America has been estimated to be well over \$100 billion,⁷ but the effect of a successful multipoint agricultural attack could surpass this and lead to long-term, perhaps unrecoverable damage to the agricultural export industry.

Project Overview

The U.S. Air Force Counterproliferation Center (CPC) was directed by the Defense Threat Reduction Agency (DTRA) to conduct a study to

determine the Department of Defense's (DoD) potential involvement in responding to an agroterrorism event. This resulting report details several possible roles for the DoD in a continental U.S. agroterrorist event.

To complete this report, the CPC identified subject matter experts in the following areas: (1) DoD response planning; (2) military manpower assessment; (3) plant and crop response; and (4) carcass disposal. These areas were chosen because each has a potential for DoD involvement.

The findings will provide local, state, federal, and DoD policy makers detailed information about current capabilities and future potential roles for the DoD in helping the nation prepare for, respond to, and recover from a terrorist attack on U.S. agriculture.

Key Findings and Recommendations

Chapter 2: Recent Disease Outbreaks and National Exercises

The military's role in the response to previous exercises or natural outbreaks of agricultural disease in the U.S. and in the world has not been clearly understood or well defined, and was limited or engaged as an afterthought when civilian forces became overwhelmed.

The following are key findings of Chapter 2:

- In foreign countries, the military was used in a logistical role (transporting carcasses and constructing disposal pits), mass euthanasia, and quarantine enforcement during response to natural foot-and-mouth disease and Nipah virus outbreaks (United Kingdom, 2001; Uruguay, 2000; Malaysia, 1998-1999).
- In the United States, military personnel, equipment, and facilities were used in response to natural disease outbreaks of Venezuelan equine encephalitis (TX, 1971), Newcastle disease (TX and CA, 1971 and 1972), avian influenza (PA, 1983), Mediterranean fruit fly (FL, 1997), West Nile fever (NY, 1999), and bovine spongiform encephalopathy (WA, 2003).
- Military participated in the *Crimson Sky* exercise (sponsored by the U.S. Department of Agriculture (USDA)), *Silent Prairie* series

(sponsored by the National Defense University), and several state-sponsored exercises (GA, NC, KS, and TX).

- During a time of war, the military may have other national defense priorities and obligations that prevent fulfilling responsibilities detailed in a Memoranda of Understanding to the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA/APHIS), as demonstrated by the military's inability to respond to the exotic Newcastle disease epidemic (CA, NV, TX, and AZ; 2002-2003) due to Operation Iraqi Freedom and Operation Enduring Freedom deployments.

The following are recommendations of Chapter 2:

- Review worldwide natural outbreaks and exercises conducted in the U.S. to better understand and conceptualize how the military could be involved in an agroterrorism response;
- Conduct exercises to enable government officials and agriculture industry leaders' participation in simulated response measures and appraise the efficacy of the existing policies; and
- Examine barriers to interagency communication and cooperation revealed through exercises and examine natural disease outbreak after-action reports.

Chapter 3: Department of Defense Response Planning

As part of its mission to defend the United States, the DoD, in conjunction with other state and federal agencies, must plan and prepare to deter, prevent, defeat, and mitigate threats against the agriculture and food system. There are many civilian agencies involved in the regulation and protection of agriculture and food production in the United States. The response planning chapter details the many federal agencies involved in protection of agriculture, progressive disaster response to an agricultural event, DoD planning considerations, and impacts of an agricultural event on the Department of Defense.

The following are key findings of Chapter 3:

- An agricultural event will hinder the military mission through disruption of food supply and troop movements, stress DoD forces with additional support requirements, activate Guard and Reserve forces, and create psychological impacts on DoD members and dependents.
- DoD Directive 6400.4 designates the Secretary of the Army as DoD Executive Agent for Military Veterinary Services. The Surgeon General of the Army has delegated authority to accomplish the following responsibilities (complete list in Chapter 3):
 - Controlling animal diseases communicable to man, and
 - Developing military standards for commercial food plants providing products to DoD components.
- Local installation commanders are authorized to respond locally on a limited basis to save lives, prevent human suffering, and mitigate great property damage (DoD Directive 3025.1).
- The National Guard can be used in Title 32 status to enforce a quarantine or stop-movement, under the control of the governor of the state, in the event of an agroterrorist incident.
- During an agricultural emergency short of a Presidential Disaster Declaration, USDA may request DoD assistance in the form of military specialists or laboratory support through the Joint Director of Military Support.
- If a Presidential Disaster Declaration is made, and state and federal resources are overtasked, longer-term DoD assistance may be requested through the Request for Assistance process coordinated by NORTHCOM.

The following are recommendations of Chapter 3:

- DoD planning should include intelligence gathering; formation of an integrated plan; and integration with local, state, and federal response systems:

- DoD must maintain active participation in the integration and development of surveillance systems;
 - NORTHCOM should work with primary federal agencies to determine possible requirements in an emergency; and
 - Local installation commanders should examine security provisions and plan for food inspection and safety for active military and dependents at a local level, and develop contingency plans in the event of an interruption of normal food distribution.
- State Adjutants General must work with state department of agriculture personnel and other response organizations to determine probable National Guard missions and resources required in an agroterrorist incident.
 - Each state should establish a public health veterinarian to serve as a link between agricultural interests and public health, thus improving communication.
 - The Assistant Secretary of Defense for Homeland Defense should address the military response and role in agroterrorism since an agricultural emergency is a domestic crisis.
 - DoD must take preventive measures and provide adequate training for recognition and destruction of foreign animal diseases and plant pests when redeploying to the United States.
 - DoD should examine and address training and exercise types and shortfalls in response to agroterrorism, for example, expand the number of military veterinarians who attend the Foreign Animal Disease Diagnostician courses at the Plum Island Animal Disease Center.

Chapter 4: Military Manpower Assessment

Much of the history, as well as current expectations regarding sharing of resources and availability of dedicated DoD assets for response to agricultural emergencies, are based on assumptions grounded in the early 1970s DoD force structure. This force structure included a large standing army, mostly in garrison, substantial Reserve and Guard Forces replenished by the military

draft obligation, and internal/organic DoD support services and equipment. The manpower chapter reviews the type and magnitude of DoD manpower support required if an agroterrorism event occurs and comments on the appropriate level of effort needed to organize, train, and equip DoD personnel for an agroterrorist event.

The following are key findings of Chapter 4:

- There were 409 licensed veterinarians and 64 Food Inspection Specialists on active duty in the Army in 2004.
- Approximately 100 active duty Army Veterinary Corps officers also have USDA training and certification as Foreign Animal Disease Diagnosticians.
- Other potential military medical personnel whose backgrounds would help prepare them for an agroterrorism response include 15 medical entomologists, as well as Army Environmental Science Officers, Navy Environmental Health Officers, and Air Force Public Health Officers.

The following are recommendations of Chapter 4:

- The federal directives, memoranda of understanding, and DoD directives should be reviewed and updated in line with current intelligence on terrorist threats;
- Manpower requirements should be redefined to support the U.S. agroterrorism response capability;
- Multiple federal agencies should be involved in agroterrorism defense research and response to avoid “warehousing” agroterrorism assets in one institution or agency;
- Agroterrorism defense research initiatives at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) and other DoD organizations should be expanded;
- Federal and state training and exercise plans should be developed and maintained; and

- Concepts and standard operating procedures for surveillance, epidemiology, quarantine, and mitigation should be developed and coordinated by DoD, U.S. Department of Agriculture Animal and Plant Health Inspection Service, as well as with state and local response entities.

Chapter 5: Plant and Crop Response

A terrorist attack against plants and crops is a national security threat. Plant and crop production possess several characteristics that make this an attractive terrorist target. The plant and crop chapter addresses these unique characteristics, potential agroterrorist targets, the responsibilities of federal agencies in safeguarding this industry, and the type and magnitude of military support required for effective plant and crop response.

The following are key findings of Chapter 5:

Characteristics that make agriculture vulnerable to attack include the geographic dispersion of crop lands in unsecured environments and the difficulty of detecting crop and plant disease outbreaks in a timely way.

Potential agroterrorist targets include field crops, farm animals, food items in the processing or distribution chain, market-ready foods at the wholesale or retail level, and agricultural facilities (including processing plants, storage facilities, wholesale and retail food outlets, food transportation links, and research laboratories).

The following are recommendations of Chapter 5:

- Enhance intelligence and monitoring concerning agroterrorism:
 - Link a national strategy to protect food and agriculture to other national security and counterterrorism programs;
 - Develop well-coordinated federal interagency mechanisms for gathering, assessing, and sharing sensitive intelligence information concerning hostile threats to U.S. food supplies and the agricultural sector;

- Enhance DoD intelligence monitoring of priority crop areas and food processing/distribution centers;
- Identify, train, and equip DoD personnel to rapidly detect plant disease; and
- Enable DoD meteorologists to assist in predicting when conditions are likely to be conducive to pest outbreaks or a greater spread of disease.
- Enhance military response measures:
 - Complete coordination and training of U.S. Department of Agriculture and National Guard forces in the eradication and disposal of infested plant materials and food products;
 - Train National Guard forces to provide security for response resources (chemicals, equipment, and personnel) and implementation of the quarantine and containment actions; and
 - Create and maintain a network of regional responder centers near major agricultural production regions for more rapid response.
- Enhance command, control, and communications through development of a federally-coordinated, nationwide, electronic communications and data management network linking private agribusiness with emergency responders.

Chapter 6: Carcass Disposal

An agroterrorist event involving livestock will, by design, result in potentially large numbers of carcasses either from death due to the disease introduced or by the mass euthanasia efforts implemented to control the spread of the disease. Regardless of the cause of death, carcasses must be disposed of quickly, safely, and in an environmentally sound manner. The carcass disposal chapter describes a number of methods currently in use to handle diseased or dying animals and their carcasses which can potentially be applied to an emergency agroterrorist event. Additionally, the chapter

details the role DoD may play in carcass disposal, including heavy equipment, manpower, logistics, and contracting expertise.

The following are key findings of Chapter 6:

- Nationally approved methods of carcass disposal include: rendering, composting, burial, landfilling, incineration and tissue digestion.
- The military may provide heavy equipment for pit construction, secure transportation, and contract expertise to support disposal efforts.

The following are recommendations of Chapter 6:

- Identify the first point of contact for DoD in the event requiring an emergency response to an attack on the U.S. animal population;
- Identify personnel and security resources available for response;
- Identify personnel with incident command expertise for response coordination and consultation;
- Identify a point of contact for contracting expertise to facilitate acquisition of third-party services and equipment; and
- Identify a point of contact in the Army Corps of Engineers to oversee and administer real property, geological analyses, and engineering and construction of landfill and compost sites.

Conclusion

This study has identified four categories of deficiencies within the DoD regarding readiness for an agroterrorism event:

1. **Planning.** There is no clear plan for integrating specific military capabilities into an overall response effort. The Army maintains communication with U.S. Department of Agriculture regarding animal diseases. However, this has not resulted in an integrated response plan.

2. **Personnel.** U.S. Northern Command (NORTHCOM) has only a single planner focused on an agroterror contingency. Moreover, although there are significant numbers of trained and experienced veterinarians, laboratory technicians, epidemiologists, and specialized technicians in the military, there is no centralized mechanism for tracking their locations and availability during an agroterrorism event.
3. **Liaison.** Although DoD has a memorandum of understanding with the U.S. Department of Agriculture and the Food and Drug Administration, these relationships should be further solidified by creating permanent liaison positions.
4. **Mission.** The DoD has not specifically acknowledged it has the mission of providing forces and/or resources following an agroterrorism event. Although this may be included, by implication, under the rubric of “homeland defense,” these shortfalls could be more easily remedied by a senior-level commitment to this mission.

This examination of the military’s role in an agroterrorist event identified issues regarding the DoD’s preparedness to contribute to a response. Senior leaders within the Office of the Secretary of Defense, the Joint Staff, NORTHCOM, and the Army should commission a more complete analysis of what should be the military’s involvement following a major national agroterrorist event. The following milestones are offered as a suggested template of action for determining the optimum military participation in response to the agroterrorism threat and for ensuring DoD readiness.

1. Determine if this is a valid mission for the DoD, likely a NORTHCOM action, in coordination with the Office of the Secretary of Defense and the Joint Staff.
2. Identify categorical capabilities that the DoD might be called upon to provide through a series of interagency tabletop and field exercises, with participation from all levels (e.g., state, local, national) of government, and including relevant non-government experts as well.

3. Evaluate the current capability of the DoD to meet those identified requirements.
4. Close the delta between requirements and current capability by fine-tuning the military force structure and/or military responsibilities as outlined in interagency agreements.

This report provides a brief investigation into several potential support activities the DoD might provide if an agroterrorist attack occurred. Since the September 11, 2001, attacks, the DoD and the military services have risen to a new set of dangerous challenges in the war on terrorism. The true test of military response capability would be its response to a national agroterrorist attack.

Notes

1. National Governors Association, "Agroterror," 6 February 2003, On-line. Internet, 17 June 2005, Available from http://www.nga.org/cda/files/BIOSUMMIT03_WILLIAMS.PPT#287,2,AGROTERROR.
2. Katherin McIntire Peters, "Officials Fear Terrorist Attack on U.S. Food Supply," GovExec.com, 10 June 2003, On-line, Internet, 20 June 2005, Available from <http://www.govexec.com/dailyfed/0603/061003kp1.htm>.
3. J.R. Gillespie, "The underlying interrelated issues of biosecurity," *J Am Vet Med Assoc* 2000; 216:662-664.
4. R. Casagrande, 2000, "Biological terrorism targeted at agriculture: the threat to US national security," *Nonproliferation Review*, 7 no. 3, 93.
5. J. Monke, "Agroterrorism: Threats and Preparedness," CRS Report for Congress, 2004, Order Code RL32521.
6. Casagrande, 2000, 92. For a good overview of the agroterrorist threat, see also, Robert P. Kadlec, "Biological Weapons for Waging Economic Warfare," Chapter 10 in Barry R. Schneider and Lawrence E. Grinter, eds., *Battlefield of the Future: 21st Century Warfare Issues* (Maxwell AFB, Alabama: Air University Press, 1998), 251-266.
7. "How much did the September 11 terrorist attack cost America?" The Institute for Analysis for Global Security, On-line, Internet, 22 June 2005, Available from <http://www.iags.org/costof911.html>.